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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,507	07/15/2004	Masayoshi Handa	1422-0635PUS1	8270

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EXAMINER
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BERNSHTEYN, MICHAEL

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 11/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/501,507	Applicant(s) HANDA ET AL.	
	Examiner Michael Bernshteyn	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>07/17/04, 10/13/04</u> .  | 6) <input type="checkbox"/> Other: ____.                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claim 8 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is not clear what are the differences between a process for preparing a water-absorbent resin claimed in claim 1 and a method for preventing discoloration of water-absorbent resin claimed in claim 8, there is no precise steps depicted to prevent discoloration of claimed water-absorbent resin.

Therefore, there is no way to enable one skilled in the art to which it pertain, or with which it is mostly connected, to make and/or use the invention. Appropriate correction is required.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 5 recites the limitation "obtainable" in the line 1. There is insufficient antecedent basis for this limitation in the claim.

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The claim is indefinite if undue experimentation is involved to determine boundaries of protection. This rationale is applicable to polymer "obtainable" by a stated process because any variation in any parameter within the scope of the claimed process would change the polymer produced. One who made or used a polymer made by a process other than the process cited in the claim would have to produce a polymer using all possible parameters within the scope of the claim, and then extensively analyze each product to determine if this polymer was obtainable by a process within the scope of the claimed process. See *Ex parte Tanksley*, 26 USPQ 2d 1389.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-4 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable as obvious over Tsuchiya et al. (US Patent Application Publication 2002/0034911) in view of Nosokawa et al. (EP 0 257 951 A2).

With regard to the limitation of instant claims 1-4 and 8, Tsuchiya discloses a **water-absorbing composite**, containing water-absorbing polymer particles immobilized on a fibrous substrate (abstract). Typical examples of monomer preferably suitable for use are **aliphatic unsaturated carboxylic acids** or salts thereof, specifically unsaturated monocarboxylic acids or salts thereof such as acrylic acid or salts thereof, methacrylic acid or salts thereof, etc. (page 3, [0052]). Aliphatic unsaturated carboxylic acids or salts thereof, especially acrylic acid or salts thereof sometimes form a self-crosslinked polymer by themselves, but may be positively induced to form a crosslinked structure using a crosslinker (page 3, [0059]).

Tsuchiya discloses that polymerization initiators should be somewhat water-soluble redox systems combining an oxidizing radical generator and a reducing agent. Such oxidizing agents **include hydrogen peroxide, persulfates** such as an ammonium persulfate or potassium persulfate, etc. (page 4, [0062]). Suitable reducing agents are capable of forming a redox system with said oxidizing agents, specifically sulfites such as **sodium sulfite** or **sodium hydrogensulfate**, sodium thiosulfite, etc. These reducing agents are used in the amount of about **0.001-10%** by weight on the basis of polymerizable monomers (page 4, [0062]).

Tsuchiya discloses that water-absorbing polymers, water-absorbing composites or water-absorbing articles may contain various additives to provide a desired functions depending on the intended purpose. These additives include stabilizers for preventing polymer decomposition or denaturation by liquids absorbed, antibacterial agents, etc. Stabilizers for preventing polymer decomposition or denaturation by liquids absorbed include a method for incorporating a metal chelating agent, and specific examples include metal chelates, etc. (pages 8 and 9, [0107], [0108]).

Tsuchiya discloses that the assembly was **dried in a drier** to the definite moisture in the water-absorbent composite (page 6, [0086], page 10, [0109]).

With regard to limitation of instant claims 1, 4 and 8, Tsuchiya does not disclose that a metal chelating agent to be present in the process in an amount of 0.001 to 6 parts by weight, based on 100 parts by weight of the unsaturated carboxylic acid, and specific limitation for a metal chelating agent.

Nosokawa discloses a disposable diaper comprises a liquid-permeable surface sheet, a liquid-impermeable back sheet and an **absorbent layer** situated between these sheets, wherein the absorbent layer comprises a polymeric absorbent and a fluff pulp and/or paper, and said **polymeric absorbent is an absorbent resin composition** containing from **0.01 to 10% by weight of metal chelating agent** (abstract)). The metal chelating agent can include with no particular restriction, for example, **ethylenediaminetetraacetic acid (EDTA)**, tripolyphosphate, **citric acid**, etc. (page 2, lines 50-51).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ **ethylenediaminetetraacetic acid (EDTA)** in the amount of **0.01 to 10% by weight** as metal chelating agent as taught by Nosokawa in Tsuchiya's water-absorbent resin because the absorbent resin composition incorporated with a specified amount of metal chelating agent in this way shows remarkably improved stability in the form of swollen gel and can maintain the gel form for a long period of time as compared with the case of not adding such an agent (EP' 951, page 2, lines 61-64).

It is noted that the amount of metal chelating agent is a result effective variable, and therefore, it is within the skill of those skilled in the art to find the optimum value of a result effective variable, as per *In re Boesch and Slaney* 205 USPQ 215 (CCPA 1980):

Discovery of optimum value of a result effective variable in known process is ordinarily within the skill in the art and would have been obvious.

With regard to the limitation of instant claim 6, Tsuchiya discloses that fibers forming the substrate are preferably **hydrophilic fibers**, such as wood pulp, rayon, cotton, generated cellulose or other cellulose fibers because they are used in water-absorbing articles (page 7, [0092]).

With regard to the limitation of instant claim 7, Tsuchiya discloses the water-absorbing material is arranged in such a manner that a water-absorbing face is provided on a fibrous substrate side. Thus, aqueous liquids to be absorbed pass through the fibrous substrate of the water-absorbing polymer particles. This ensures that a water-absorbing article, which allows rapid absorption and hardly releases the absorbed aqueous liquids even under pressure, can be obtained. Water-absorbing articles preferably have a layer of a bulking material such as fluffy pulp. The fluffy pulp layer is preferably provided on the water-absorbing polymer side than the fibrous substrate side (page 8, [0104] and [0105]).

Tsuchiya discloses water-absorbing articles, having a structure as defined in Table 2 selected from FIG. 7(a)-(e), which clear show that absorbent immobilized on fibrous substrate (hydrophilic) and polyester fiber nonwoven cloth (hydrophobic) (page 13-14, Example 10 and Table 2, page 14, [0175]).

4. Claim 5 is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tsuchiya.

The disclosure of Tsuchiya reference resided in § 3 is incorporated herein by reference.



With regard to the limitation of instant claim 5, Tsuchiya does not disclose that the water-absorbent resin has Yellow Index of 12 or less, after allowing to stand at 50°C and 90% relative humidity for 20 days.

Regarding the water-absorbent resin limitations in view of substantially identical monomer, reducing and oxidizing agents, metal chelating agent, process producing such products (compare US'911, pages 9-10, [0117], Examples 1 and 2, and the specification, pages 18-20, Example 1) being used by both Tsuchiya and the applicant, it is the examiner position to believe that the product, i.e. water-absorbent resin of Tsuchiya is substantially the same as the water-absorbent resin recited in claims 1, 5 and 8, even though obtained by a different process, consult *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Since the USPTO does not have proper equipment to do the analytical test, the burden is now shifted to the applicant to prove otherwise.

It is axiomatic that one who performs the steps of a process must necessarily produce all of its advantage. Mere recitation of a newly discovered property or function what is inherently possessed by the things or steps in the prior art does not cause a claim drawn to those things to distinguish over the prior art. Leinoff v. Louis Milona & Sons, Inc. 220 USPQ 845 (CAFC 1984).

### **Conclusion**

Other references used but not cited in this office action include U.S. Patents 5,773,542, 6,797,656, 6,300,306, 4,959,060, 5,814,304, 5,194,550, 5,041,508,

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4,397,776, US-2002/0034911, US-2005/0085604, US-2001/0021375, US-2004/0247871, US-2004/0110914, EP 0 257 951 A2, JP 63146964, JP 05086251, JP2000-230129 and JP 2000-327926 are shown on the Notice of References Cited Form (PTO-892).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Bernshteyn whose telephone number is 571-272-2411. The examiner can normally be reached on M-F 8-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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